June 27, 2007

Ms. Margie Lopez-Reed
Regional Water Quality Control Board
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114

Re: Comments on Monitoring Data

Dear Ms. Lopez-Reed:

Thank you for allowing the Sacramento Valley Water Quality Coalition (SVWQC) to review the Draft 2007 Review of Monitoring Data for the Irrigated Lands Conditional Waiver Program. Please see the SVWQC's comments below.

Executive Summary

Executive Summary, First Paragraph

To give better context to "2007 review", it should be noted the dates of the monitoring being used, i.e. May 2004 through October 2006.

ES-1 & ES- 2, Overview of Water Quality Concerns

Number 3: It should be noted that no exceedances of toxic trace metals criteria were observed, and trace metals have not been determined to contribute to any cases of toxicity to algae.

Number 5: It should be clarified that detections are not necessarily exceedances.

Number 6: The use of "*common*" is vague and should be defined or clarified in: "The toxic effects of or organophosphate pesticides, …are common in all zones."

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ES- 2, ES-3 & ES-4 Data Gaps

Number 1: "Each Phase was to have been conducted for two consecutive years." This is not an accurate description of the MRP language. The MRP states, "*...Phase 2 will start no later than 2 years after Phase 1* ", which specifies the interval between starting each phase but doesn't specify the length of each phase.

Number 1: "The temporal separation of toxicity testing and the measurement of potential stressors that cause toxicity creates an information data gap, which makes any source identification process much more complex." Is there an easier and less confusing way of stating that the chemical analysis and toxicity collection, in some cases, did not occur at the same time? A more clear and accurate statement would be "Toxicity testing and some chemical analyses were performed during the different phases. This phased approach provided less information about potential causes of toxicity than desired."

Number 2: The inability of the program to assess trends is not a failing of the program or of the Coalitions. Two years is simply an insufficient period to evaluate trends in highly variable water quality characteristics.

Number 3: *"The Central Valley Water Board has tentatively identified a process by which it could set forth the beneficial uses by water body according to existing Basin Plan requirements, and thereby identify the limits to be used in implementing the water quality standards."* Although it is not clear exactly what this process is, we applaud the effort to establish a process. However, it is not sufficient only to identify beneficial uses. The Board also needs to identify valid and appropriate numeric objectives to evaluate water quality supportive of those beneficial uses. The current process of using the lowest of a variety of unvalidated "triggers" does not meet consistent, rigorous scientific standard for setting water quality objectives, and it does not appear to comply with Porter-Cologne requirements.

Number 6: "*... data that is not captured includes occasions when drainage occurs from water that is applied for other purposes, such as pre-planting application, post-harvest application, and application of water for frost protection.*" This describes specific conditions described that are not currently targeted for sampling by the ILP MRP. The statement is accurate, but fails to note that these conditions are not common, account for only a very small percentage of runoff and drainage, and are unlikely to have region-wide water quality impacts.

Number 7: It should be noted that the SVWQC in Zone 1 has proposed a structured and objective long-term approach to prioritizing monitoring to satisfy the ILP MRP goals and objectives. This was refined in 2006 for the Coalition's Monitoring Plan for 2007, and the approach received verbal approvals during meetings between the Coalition and Water Board staff. However, the Coalition has not yet received any formal review or approval of the 2007 plan from the Water Board.

Section I. Introduction

Page 1, Purpose of the Discussion

The specific dates of the monitoring data being reviewed (i.e. May 2004 through October 2006) should be used here to give better context to "2007 review".

Page 1, Structure of the 2007 Review, Zone 1, Second Paragraph

Last sentence, add the word Estuary, "to the San Francisco Bay Estuary, and its watershed covers...."

Page 5, Data Included in this Evaluation

It should be noted that UCD data is gathered differently from Coalition data. The Coalitions generally collected one grab sample per site per event. In contrast, the UCD monitoring collected multiple samples per event (or per day) at some sites, and analyzed both composite and grab water sample. These differences in sampling have the potential of significantly biasing the data summary, especially when evaluating percentages of exceedances of water quality objectives.

Page 8, Second Bullet

This bullet incorrectly states monitoring is assumed to be conducted only on water bodies that are "*not constructed agricultural drains, nor are they non-stream tributaries*". Coalition monitoring includes several sites approved by the Water Board that are constructed specifically for conveying agricultural drainage and irrigation supply (e.g., Wadsworth Canal, Colusa Drain). Additionally, it should be clarified what is meant by "*non-stream tributaries*".

Section II. Zone Data Summaries
Zone 1

Zone 1 Description, First Paragraph

Revise the last sentence to read as follows: "Zone 1 includes irrigated lands within the geographic areas represented by Sacramento Valley Water Quality Coalition (SVWQC), which is subdivided in 10 subwatersheds, the Goose Lake Coalition, and the California Rice Coalition. It should also be clarified that the California Rice Coalition drainages are included within the SVWQC area, but are focused on acres planted predominantly with rice.

Table Z1-1

Analyte: Mercury is not part of the irrigated lands program. It does not have agricultural sources and should not be included in this table (Number 1, 3 and 4).
Potential Sources: It is incorrect and misleading to list only Agriculture as a potential source. All potential sources of the analytes of concern should be included. The way it is currently stated it looks like Agriculture is the only source.

Is this the best placement for the table, mixed in with the Upper Feather River Subwatershed section? Suggest moving the table after all of the subwatershed descriptions, or making individual tables specific to each subwateshed.

Applies To All Subwatersheds

The basis and description of "trends" in pesticide use is misleading and inappropriate. Two years is insufficient time to establish a trend. Gross pounds of pesticides applied is also a particularly un-useful statistic because it is dominated by low-efficacy high-application rate pesticides and tells us little about the potential reduction or increase in risk to water quality. This should be made either more specific (e.g., for certain pesticides), clarified, or deleted.

El Dorado, and Lake/Napa Subwatersheds

Once again Mercury is not part of the irrigated lands program and should not be included in this discussion.

Lake/Napa Subwatersheds

The last sentence in this section is in reference to the Pit River Subwatershed, not the Lake/Napa Subwatershed.

Goose Lake

This should be moved after the SVWQC 10 subwatersheds instead of being in the middle.

Page Z1-6, Table Z1-2

Number 9: "Andersen" should be Anderson.

Number 19: "Consumnes" should be Cosumnes.

At the end of the table there is a box with a description of what shaded means, there is no description for what is non-shaded.

The use of the subtotals in the middle of the table is awkward, and should be explained.

Page Z1-12, Top of the Page

All stressors can affect all test species when concentrations are high enough: Remember, "The dose makes the poison".

Page Z1-12, Figure Z1-3

This is clear objective presentation of the results. It would be improved by differentiating the toxicity by magnitude (e.g., ≤20%, >20%, >50%), as is done in Table Z1-3, etc.

Page Z1-14

"*Selenastrum*" should be capitalized wherever it occurs.
If you need to make a general association between metals and algae toxicity, it should be noted that in no case was toxicity attributed to trace metals, and that no exceedances of objectives for trace metals toxic to algae (e.g., copper) have been observed.

The number of *Selenastrum* tests seems low compared to other species. It seems like many conclusive results non-toxic were unnecessarily excluded, with the net effect of inflating the percent of toxic samples.

Page Z1-16, Hyalella results

It should be noted that most of the samples with statistically significant toxicity were less than a 20% effect. Only 7.6% of samples had a reduction greater than 20%.
The statement that "*The highest frequency of sediment toxic tests compared to the number collected seems to have occurred in the Sacramento/Amador, Solano/Yolo, and the Colusa Basin Subwatersheds.*" is vague and seems subjective. Any such comparisons should be made on a more objective and rigorous basis.

Page Z1-17, Table Z1-7

It should be specified which water quality objective is being used for diazinon.

Page Z1-16, Table Z1-6

This table (and others like it) should include have an explanation for distinguishing between the different magnitudes of toxicity (≤20%, >20%, and >50%). It should be explained that these are triggers for specific actions and consequences in the ILP.

Page Z1-17

"Shasta/Tehama Subwatershed: Site No. 11 (Burch Creek at Woodson Avenue Bridge) had multiple toxic results for *Ceriodaphnia* and one measured value of diazinon over the Basin Plan Objective." It should be explained that upon further investigation, results were likely due to non-agricultural sources (e.g., I-5, and truck stop and/or a nearby landfill).

Page Z1-17, Table Z1-7

"Chlorpirifos" should be Chlorpyrifos.

Page Z1-18, Table Z1-8

Number 9: "Andersen" should be Anderson.

Page Z1-19, Data Gaps

Goose Lake is not a subwatershed of the Sacramento Valley Water Quality Coalition. Therefore, it would be better to rephrase the first paragraph under Date Gaps to say, *"Monitoring frequency varies significantly for different Coalitions within Zone 1. For example, there are no available monitoring results for this 2007 review for the Goose Lake Coalition area. While there is significant data available for the Sacramento Valley Water Quality Coalition, but the number of data points varies from subwatershed to subwatershed."*

Page Z1-20, First Full Paragraph

"There are areas to the north of Cache Creek, Lake Napa County..." should be "*There are areas to the north of Cache Creek, Lake and Napa Counties."*

There is not a " Pit Fall River", please clarify the area you are referring to.

Last sentence: "*These areas will be the focus during the next site selection process within the next year or two.*" This does not appear to be a very strong or objective basis for selecting monitoring location. The Sacramento Valley Water Quality Coalition has not agreed that these areas have data gaps and therefore may or may not be the focus of the next site selection process. As stated in previous comments, SVWQC has provided the Water Board with an objective scientifically-based approach to prioritizing sites for monitoring.

Page Z1-20, Second Full Paragraph

This should state that "*A Management Plan effort has been initiated by the Sacramento Valley Coalition to address this question.*"

Page Z1-20, Third Full Paragraph

This sentence, "*In some instances, surveillance of land management and implementation of practices, such as fencing to restrict grazing animals, could be implemented to lower levels of the pathogen indicator*" implies that agriculture is responsible for the *E. coli* exceedances that are occurring throughout the Valley. It should be restated as "*In cases where agriculture is responsible or determined to contribute, surveillance of land management and implementation of practices...*"

Page Z1-21

It should be noted that toxicity was greater than 20% in only 7 out of 17 statistically toxic samples (7.6% of all samples), and at only 5 sites (10% of sites).
The relative frequency of Ceriodaphnia toxicity was much lower (approximately half) than of the frequency of chlorpyrifos and diazinon exceedances. This suggests that the chlorpyrifos and diazinon exceedances appear to overestimate invertebrate toxicity risk by ~50%.

Section III. Closing Summary

Monitoring and Reporting Program Issues

Page 1, Second Paragraph

With the all the Exceedance, Communication and the semi-Annual Reports that are required to be turned in, I believe the Coalitions has a good understanding of the constituents of concern.

Page 1, Fourth & Fifth Paragraphs

These two paragraphs are restatements of each other, one paragraph could be eliminated.

Monitoring Data Gaps

Page 2, First Paragraph

Need to clearly identify or restate the "priority areas" referenced in this paragraph.
Delete "either" from the third sentence.
The last sentence indicates a summary of data gaps was previously discussed in the section, but no summary of data gaps was included. As a result, it is difficult to determine whether the four steps outlined below the paragraph will address data gaps.

Page 2, #3 in the List

This is unrealistic with or without Coalition collaboration. The Pesticide Use Reporting system does not now, and will likely never support the kind of real-time site-specific reporting of pesticide applications that would be required to achieve this goal.

Page 2, #4 in the List

You will typically not see runoff during the "insufficiently characterized seasons" referred to in this paragraph, and the runoff that does occur will not cause streams to flow.

Page 2, Salinity and Background Contaminants, Third Paragraph

The first sentence is unclear. It states that "*There are constituents associated with irrigated runoff that will not be easily answered, and will require a concerted effort on the part of many agencies and groups, scientific studies, and perhaps the development of new management practices with different approaches to protecting water quality.*" It's not clear what this sentence is stating. The paragraph goes on to state that a CV Salinity Management Plan is being developed that will affect the ILP, but no details are provided.

Page 2, Multiple Land Uses, Fourth Paragraph

"Municipalities" are not a land use.

As a broader watershed approach, it may help to add a sentence on improving interdepartmental communication (i.e. coordination between the NDPES, dairy and Irrigated Lands Program with in the agency, as well as improving communication with other agencies).

Page 3, Prioritization of Implementation, First Paragraph

The first sentence (unintentionally?) implies that if data represent a broad geographic area, management practices implementation is required. No justification for this statement is provided.

The last sentence states that "*To address the magnitude of this potential concern,*" but it is not clear what the antecedent of "this" is, or what is meant by "potential concern".

Page 3, Prioritization of Implementation, Second Paragraph

The first sentence states the obvious, and it would not be cost effective for any grower to implement management measures that had small or no potential to improve water quality. This paragraph also makes one think that there are no management practices in place.

Page 3, Management Practice Effectiveness, Fourth Paragraph

The meaning of the statement "Construction of physical management practices may be one measure of implementation effectiveness" is unclear. The paragraph goes on to state that the ultimate measure effectiveness of management practices is improved water quality. However, it then states that since this may take many years to identify, it's important to measure management practice effectiveness through runoff or localized monitoring where appropriate. It appears that the paragraph is trying to state that the number of constructed facilities could be used as a surrogate for improved water quality based on the assumption that facilities such as sediment basins can reduce inputs to streams. While physical facilities may reduce inputs of specific constituents (e.g. sediment basins and sediment), the statement ignores numerous non-construction approaches to management of applied constituents that can be very effective in reducing inputs to streams. These approaches should not be ignored, nor should the Regional Board believe that only constructed management facility approaches can be effective.

Page 3, Trend Analysis, Paragraph 5 and 6

It should be noted that SVWQC has continued to monitor several "core sites" at the request of the Water Board staff.

Attachment
Trigger Limits Used for Zone Data Review

Generally, it should be noted that the "trigger limits" come from a variety of sources and are not all equal or comparable in their scientific basis, their rigor of development, and the validity of the underlying data. It should also be made clear that many of the "trigger limits" do not have any legally recognized regulatory basis, but are being used under the ILP as screening values to

trigger various actions and evaluation of the need for management of potential water quality problems.

Aluminum, antimony, chromium, hexavalent chromium, and mercury are not ILP parameters and should be deleted from the Trigger Limits table.

The original source of the agriculture-based "trigger limits" for TDS, EC, boron should be referenced (Ayers and Westcott)

Basin Plan designated beneficial uses (e.g., WARM and COLD) should be all caps.

The DO minimum of 7.0 mg/L should list the specific beneficial uses.

Footnote 1: Should be "...*affected by the particular parameter*".

Public Health Goals should not be used as a regulatory "trigger" for human health benefits when there are legally valid MCLs for this purpose. This also applies to USEPA IRIS Reference Dose and Cal/EPA Cancer Potency Factors. These are not effect threshold values. Additionally, they are intended to be levels safe for long-term daily human consumption of treated drinking water, and are clearly not valid to be used as a "never to be exceeded" value in untreated surface water with a low potential for incidental human exposure. If they must be used at all as "triggers", they should be compared to long-term average or median water quality characteristics when evaluating potential risks.

Attachment B
Crop and Pesticide Use

Missing dates the reports were generated.

It should be noted that portions of some of the counties listed are not in the Coalition's areas nor are they part of Region 5 (i.e. the portion of Napa County that is in Region 5 is only 8% of the irrigated land in that County).

See also previous comment regarding evaluation of pesticide "trends".

Zone 1 Figures and Maps

Figure Z1-3 through Figure Z1-6:

In the summary charts, the y-axis should be the percent of toxic samples to allow comparison between species results, and to provide perspective on the frequency of toxicity. Showing only the total number of toxic results is misleading because it provides no perspective without the total number of samples evaluated. The total number in each category can be added to the charts without affecting the meaning or purpose of the graph.

In the map, toxicity should also be presented as percentages, not absolute numbers.

Figure Z1-7, Pesticides:

In the summary charts, the y-axis should be the percent of exceedances to provide perspective on the frequency. Showing only the total number of exceedances results is misleading because it provides no perspective without the total number of samples evaluated. The total number in each category can be added to the charts without affecting the meaning or purpose of the graph.

In the map, exceedances should also be presented as percentages, not absolute numbers.

Figure Z1-8, *E. coli*:

In the summary charts, the y-axis should be the percent of exceedances to provide perspective on the frequency. Showing only the total number of exceedances results is misleading because it provides no perspective without the total number of samples evaluated. The total number in each category can be added to the charts without affecting the meaning or purpose of the graph.

In the summary chart, no axis legend or explanation is provided. The presentation is not consistent with other figures and will be confusing to interpret.

In the map, exceedances should also be presented as percentages, not absolute numbers.

We look forward to continuing to work with you and your staff to provide Board Members and the general public an accurate assessment of the data collected under the Irrigated Lands Program.

Sincerely,

Tina Lunt

Tina Lunt

cc. Pamela Creedon, Regional Water Quality Control Board
Bill Croyle, Regional Water Quality Control Board
Jodi Pontureri, Regional Water Quality Control Board
Margaret Wong, Regional Water Quality Control Board